ARCHÆOLOGICAL DISCOVERIES IN EGYPT.

H. R. Hall

THE progress of archæological discovery in the Near East goes forward steadily without halt. Every year more is added to our knowledge of the ancient peoples of Greece, Egypt, and western Asia; with each year we have only to await the surprises that the excavators have in store for us. Egypt has contributed some very important results this season, in two remarkable discoveries at Thebes. One of these is a find of the highest interest which will appeal to the minds of all, even those entirely ignorant of archæological science; this is the discovery of the actual body of Tii, one of "the most famous of Egyptian queens," lying in her tomb, with her funeral pomp around her. The other is a discovery which will appeal more to the architect and the student of Egyptian religion than to the layman—the uncovering of the subterranean "tomb-shrine" of King Mentuhetep, and the pillared halls above it, at the western end of his funerary temple, the excavation of which has been brought to a close by this final discovery.

Both these discoveries were announced in the *Times* some time ago, but readers of NATURE may like to hear further details.

Thirty years ago nobody would have thought it possible that we should eventually recover and place in one central museum the actual bodies of all the most powerful Pharaohs of Egypt, the actual mummies of three whole dynasties of kings. But this is now the case. With but few exceptions, the mummies of all the monarchs of the eighteenth, nineteenth, and twentieth dynasties, the most imperial period of Egyptian history, now rest within the walls of the Cairo Museum. Some have been unrolled, others have not. It seems doubtful whether the actual features of these dead princes should be exposed to the gaze of every vulgar tourist, who very often has no appreciation whatever of the wonder of the sight which he is beholding; and very probably a more reverent taste will eventually withhold these august bodies from the indignity of public exhibition in glass cases. But at present those that have been unrolled may be seen by all for a shilling.

The chief discovery of royal mummies was the well-known one of 1881. In 1898 a further series was discovered in the tomb of Amenhetep II. (the only king who rests, as all should do, still in his own sepulchre). Of late years the systematic exploration of the Valley of the Tombs of the Kings has been undertaken by an American, Mr. Theodore M. Davis, who has each year made some discovery of importance. To him is due the opening of the tombs of Thothmes IV., with its interesting funerary furniture, of Hatshepsu, of Siptah, of Iuaa and Tuaa, the parents of Queen Tii, and, lastly, of Queen Tii herself. In the discovery of the first two tombs mentioned above, Mr. Davis was assisted by Mr. Howard Carter, then chief inspector of antiquities at Thebes; the discovery of the tomb of Iuaa and Tuaa was effected with the cooperation of Mr. J. E. Quibell, Mr. Carter's successor at Thebes; while in the discovery of the tombs of Siptah and Tii Mr. Davis had the help of Mr. Edward R. Ayrton, who had previously assisted Prof. Petrie at Abydos and Ehnasya and Prof. Naville at Deir el-Bahari.

Of all Mr. Davis's discoveries, that of the tomb of Iuaa and Tuaa, the parents of the queen whose grave was found this year, is the most important from the scientific standpoint. Not only were the mummies in absolutely perfect condition, but the tomb was found full of an incredible treasure of funerary furniture and other work in wood, ivory, and gold, which has become well known from various popular publications during the last two years, and has already provided many new models to our cabinet-makers. But a greater personal interest attaches to the tomb of their daughter, the Queen Tii, and more general attention has been directed to this discovery than to the former one, although, alas! the body of the queen has decayed, and nothing but the grinning skull remains which once was clothed with the most beautiful features and contained the cleverest brain in Egypt about 1400 B.C. The furniture, too, of the tomb is not in such good preservation, and, indeed, never was so fine, as that in the tomb of Iuaa and Tuaa. But personal interest is great nowadays, and Tii is more interesting than her parents.

Like the rest of the royal tombs, that of Tii was found in the Valley of the Tombs of the Kings at Thebes, "the Place of Eternity" as the Egyptians called it, where, in his "August Habitation of the West," a deceased king was laid to rest, "no man seeing, no man knowing," that tomb-robbers might not find the position of the grave and despoil it of its treasures (Fig. 1; photograph taken by moonlight).

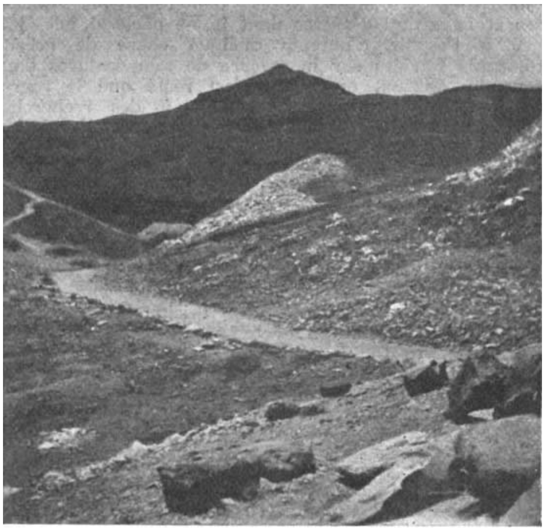

FIG. 1.—The Valley of the Tombs of the Kings, taken by moonlight.

But neither Tii nor, possibly, her parents had originally been buried in the Theban valley. Tii belonged, as is well known, to the heresy of the Disk-worshippers, of which her son Khuenaten was so vigorous an adherent. To her more than to any other person was probably due the introduction of this heresy as the fashionable religion of the royal court, and she instilled the principles of her peculiar belief into the mind of her son, who became a fanatical persecutor of the national orthodox religion, so much so that he removed his court from Thebes, the headquarters of the orthodox priests of Amon, to a far distant spot, the modern Tell el-Amarna. Here Tii lived and died, and was first buried. But after the fall of the Disk-worship and the re-migration of the court to Thebes under King Tutankhamon, these royal bodies were taken from their tombs and re-interred in the King's Valley at Thebes. Queen Tii, like her parents, was placed in a small private tomb of older date, hardly consonant with her royal state, and contrasting greatly with the magnificent royal hypogæa close by (Fig. 2). Here she was hurriedly laid in some confusion, her funerary furniture being incomplete and its parts improperly fitted together. Before leaving the mummy, thus transferred to its final abode, careful erasure was made of every occurrence of the name and figure of the heretic Khuenaten, who had laid his mother to rest at Tell el-Amarna, and had dedicated in her tomb funerary furniture bearing the record of his filial piety. That the transference took place in the reign of Tutankhamon is shown by the discovery in the tomb of seals bearing his name.

Such are the conclusions to which Mr. Ayrton has been drawn by the study of the condition of the tomb, and there is little doubt that they are correct.

The funeral pomp of the queen had been of great splendour and unusual design, but has most unhappily been damaged by water, which at some period unknown has penetrated into the tomb. The result is that most of the woodwork will not bear handling; much, however, including the skull and bones of the queen, has been preserved by means of boiling paraffin wax, which soaks into the porous substance to which it is applied and solidifies it. Of great splendour must undoubtedly have been the great catafalque, in the form of a shrine, which covered the coffin of the queen instead of a sarcophagus. This, on which are delicate reliefs, was entirely overspread with thick gold, the remnants of which filled the tomb, so that everywhere the excavators trod upon gold when they entered. Of unusual design was the actual coffin, the woodwork of which was covered by a frame of gold, inlaid with carnelian and with blue and green glass in scale patterns and the forms of hieroglyphs recording that Khuenaten had had it made for his mother. The mummy itself, the lamentable condition of which contrasts so strongly with the splendid preservation of the mummies of Iuaa and Tuaa, was wrapped in sheets of gold. On the head of the mummy was a golden diadem in the form of a vulture with wings spread round to embrace the head. The workmanship of this diadem shows that it is merely a funerary object, and was not an actual crown worn by the queen in life.

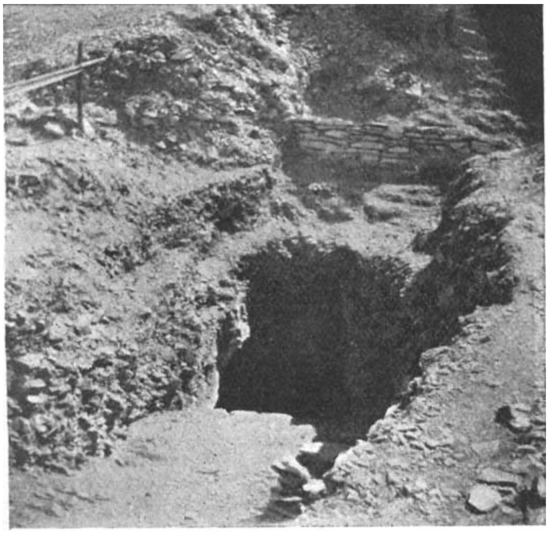

FIG. 2.—The Tomb of Tii.

Of the other objects found in the tomb, the most important are the "canopic jars," which contained the mummified viscera of the deceased. Usually the lids of these jars are formed in the shape of the heads of the "four genii of Amenti" (the underworld); but in this case the heads are those of the dead queen herself, beautiful portraits in alabaster, with the eyes and brows represented in lapis-lazuli and obsidian. As portraits, these heads are remarkable, and evidently are accurate likenesses of the queen.

Of other funerary furniture there was little, the reason being that it had been left behind at Tell el-Amarna.

Such is the most remarkable discovery of the year in Egypt. The completion of the excavation of the funerary temple of King Mentuḥetep at Deir el-Bahari, not far off, naturally makes a bad second in point of view of general interest, but is of much greater scientific importance to the student of Egyptian architecture and religion.

The explorations which have been carried out during ten seasons at Deir el-Bahari by Prof. Naville for the Egypt Exploration Fund have now been brought to an end with the completion of the excavation of the Eleventh Dynasty temple (see NATURE, vols. lxx., 1904, p. 155; lxxiii., 1906, p. 468). Four seasons have been occupied with this work since the discovery of this temple by Prof. Naville and Mr. H. R. Hall, of the British Museum, in 1903. For part of each season Mr. Hall has been associated with Prof. Naville as his principal assistant and coadjutor, while Mr. C. T. Currelly has also assisted during the whole of the last two seasons' work, taking the place of Mr. E. R. Ayrton, who assisted during the second season, but has since transferred his energies to the work of excavating the royal tombs, as we have seen above. During the fourth season Mr. M. D. Dalison also worked as a regular member of the Fund's staff, having in the preceding year worked as a volunteer. In the second season Mr. H. Garnett-Orme, and in the third and fourth Mr. J. T. Dennis, also volunteered their assistance. The preparation of the plans has been carried out by Messrs. C. R. Peers and Fatio, under the supervision of Mr. Somers Clarke; and Madame Naville has specially undertaken the work of piecing together the fragments of sculpture, a task which demands much study.

The work of the third season (1905–6) was chiefly notable for the discovery of the remarkable Cow of Hathor in her shrine, now in the Museum of Cairo. This was the most sensational archæological discovery in Egypt last year, as the find of Tii's tomb is the most sensational discovery this year. Nothing so sensational has been discovered in Mentuhetep's temple this year, though the results of the work are archæologically important. At the extreme western end of the temple, immediately beneath the cliffs of Deir el-Bahari, is a pillared hall, of ten rows of eight columns each, at a slightly higher level than the rest of the temple. Within this is a small *cella* or *sekos*, which contains a white limestone altar, of unusual form—square, with a circular depression on its surface, on to which libations were poured. This altar is placed in front of a niche in the rock, which formerly contained a stone shrine.

The whole of this Western Pillar Court, with the *cella*, is placed above the most remarkable feature of this part of the temple—the Tomb-sanctuary of the *ka* of King Mentuḥetep. This is to all appearance a rock-cut royal tomb, like those of the Valley of the Kings. It descends in the regular way at a gentle slope for a distance of 450 feet until a chamber is reached, faced with splendid granite blocks like those of the Pyramids, and containing an alabaster shrine in which once stood a statue of the king. In M. Naville's view the monarch himself was not buried here; this was a sort of imitation tomb, made for the statue of his *ka*, and perhaps commemorating his deification at the time of his jubilee, the "Festival of the End," or *ḥeb-sed*; when, before he could be regarded as a god, the king had to be temporarily regarded as dead, in which case a funerary chamber might be built, and even an elaborate tomb constructed, long before his real death, when the real tomb would be built. The real tomb of King Mentuḥetep seems to have been within the bounds of the temple. In the south-west corner of the western hall was excavated a small tomb containing a great alabaster sarcophagus which probably once contained the body of King Mentuḥetep. This may have been the real tomb, in an inconspicuous spot. The imitation tomb descended with a great open dromos in the sight of all men in an open court between the Western Hall and the Pyramid (Fig. 3).

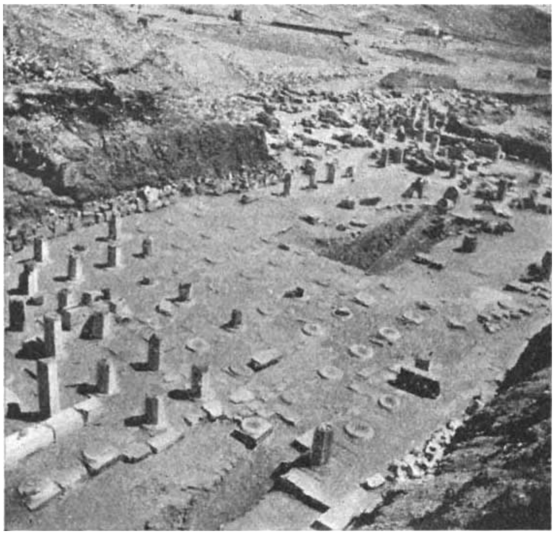

FIG. 3.—West End of the XIth Dynasty Temple, Deir el-Bahari, showing descent to tomb-sanctuary.

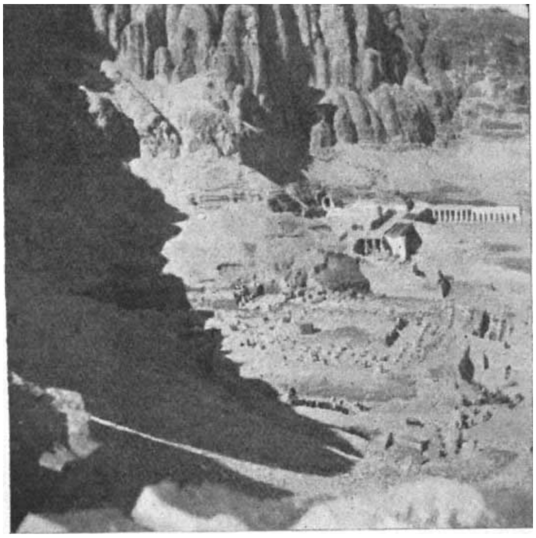

FIG. 4.—The two Temples of Deir el-Bahari, from the south.

All this constitutes a considerable addition to our knowledge of Egyptian architecture and archæology, and the authorities of the Egypt Exploration Fund are to be congratulated on having brought their great work at Deir el-Bahari (Fig. 4) to a successful conclusion.

Of other work in Egypt, the most successful seems to have been that of the Oxford archæologist, Mr. Randall-Maciver, for the University of Pennsylvania. Mr. Maciver has been excavating town-ruins of the XVIIIth and XXVIth Dynasties near Amada, in Nubia, and in the XXVIth Dynasty town has found remains of a peculiar art, very un-Egyptian in type, and showing points of contact with that of Greece. The painted pottery is especially remarkable. This art would seem to be of native Nubian origin, influenced perhaps by Naukratis; Naukratite wares could easily be sent up the Nile into Nubia. We await further details of this discovery with interest.

Excavations at Alexandria have resulted in the discovery, near Pompey's pillar, of some fine sphinxes; one, headless, of the reign of Horemheb (XVIIIth Dynasty), and two others, made of fine white limestone, of the Ptolemaic period (Fig. 5).

At Asyût Mr. D. G. Hogarth has discovered and excavated many new tombs of the XIth and XIIth Dynasties, with the usual funeral furniture, of model boats, granaries, and so forth, like those found by Prof. Garstang a few years ago at Beni Hasan.

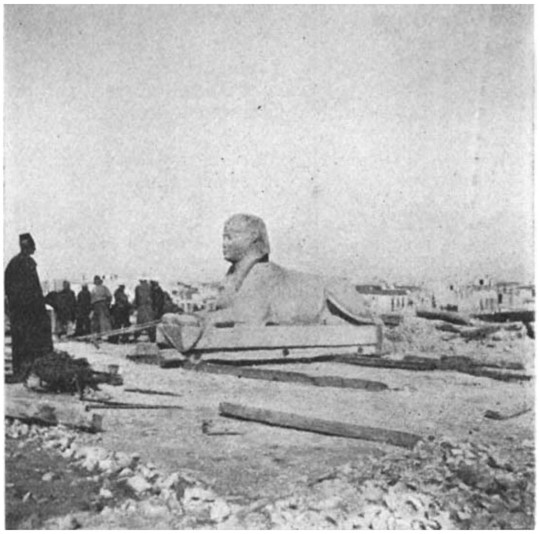

FIG. 5.—Sphinx discovered at Alexandria.

Prof. Garstang and Mr. Harold Jones have been exploring cemeteries of the XIIth Dynasty and the Roman period at Abydos with success.

Outside Egypt, the chief discovery of the past year of interest to Egyptologists has been Prof. Winckler's find at Boghaz Köi, the ancient Pterion, on the Halys, of cuneiform tablets containing the records of diplomatic intercourse between the kings of the Khattê or Hittites, whose capital Pterion was, and King Rameses II. of Egypt. We already knew from the Egyptian records that Khetasil of the Hittites and Rameses of Egypt made an extradition treaty according to which criminals of either country were to be given up by the other, but now we have some of the correspondence between the two courts, found on the Hittite side. In these tablets the Egyptian king is spoken of as "*Ramases mai-Amana satep-ni-riya.*" This transcription of the Egyptian name is interesting, as giving us an approximate idea of how the Egyptians pronounced the name which we conventionally write "Rameses meri-Amen setep-en-Rā." This find is a second discovery of Tell el-Amarna letters, and may prove equally important!

In connection with the relations between Rameses II. and the Hittites, an interesting little discovery may be chronicled. Last year Prof. Breasted, copying the inscriptions of the temple of Abu Simbel in Nubia, read through again the inscription which records the marriage of Rameses with the daughter of the Hittite king, contracted in order to cement their alliance. In the course of reading he came across a new word, which he identified as the Egyptian expression for *snow*; this word reads *selg*, which is evidently the Semitic *telg*, "snow" or "ice," which we have adopted to express the substance *talc*. Rameses is speeding the Hittites on their homeward way, and hopes that they will not be troubled by snow in the Lebanon passes. Hot Nubia was a curious place in which to find and first identify the hieroglyphic word for "snow"!

SCIENCE AND GOVERNMENT.

A. T. Simmons (ed.)

THEORETICALLY at least most observers admit that the adoption of the scientific method in the management of the affairs of State is a preliminary necessity if national efficiency is to be secured. The Secretary of State for War notably has urged again and again that we cannot expect as a people to compete successfully with other nations, whether in peace or war, unless like them we learn to take advantage of the assistance which science and men of science are able to offer.

It is only in recent years that it has begun to be understood in how many directions the methods of science are applicable. No longer is it imagined that the plan of inquiry which has proved so successful in probing the mysteries of the material universe is suitable only in the laboratory and observatory. The adoption of similar lines of approach in the study of history, language, economics, education, and other subjects at one time thought to have nothing in common with science has resulted, indeed, in unprecedented progress in all of them. So, too, in recent times industry and commerce have come under the same influence with beneficial results. The spirit of scientific research, in fact, is beginning to dominate most forms of intellectual activity.

There is growing evidence, also, that politicians in most countries are beginning to realise that statesmanship is no exception to this rule, but, like other skilled labour, is most satisfactory when conducted on scientific principles. But whether British statesmen appreciate this truth to the same extent as those of other great nations is a matter of grave doubt. Their education generally has been of such a character as to leave them with a colossal ignorance of science and scientific methods; and it is only by overcoming the bias received at the public school and university that most of them come to understand the modern outlook. One of the results of the regard in which science is held by legislators is to be found in the amount of money they vote from the public funds for scientific purposes, and it is consequently possible to institute a comparison between the importance attached to scientific investigation by statesmen in the United States on one hand, and in the United Kingdom on the other.

"The Digest of Appropriations for the Support of the Government of the United States for the Service of the Fiscal Year ending June 30, 1908," recently published in Washington, provides detailed information as to the amounts voted by Congress to enable American statesmen to secure the best scientific assistance in the different Government departments. Similarly, the various estimates—for the Army, Navy, Civil Services, &c.—ordered to be printed by the House of Commons, and procurable from Messrs. Wyman and Sons, Ltd., give full particulars as to the provision made by the House of Commons, at the suggestion of the Chancellor of the Exchequer, for similar help during 1907–8 for the British Government.

In the following comparison no reference is made to educational establishments for the technical training of soldiers and sailors or to the grants made to colleges and universities. This subject has been exhaustively treated in these columns on more than one occasion. The intention here is to compare the amounts set aside in the two countries for scientific investigation with a view to the application of the results to matters of national importance. Some amounts may have been overlooked, but it is believed that every sum of importance, so far as the comparison is concerned, has been included.

To begin with the United States, it will be best first to state simply, under the headings as they occur in the official volume from Washington, the amounts voted for various purposes, and then to explain more fully the specific purpose of the grant in cases where it seems necessary.

TABLE I.—UNITED STATES.

	£
Under Smithsonian Institution.	
International Exchanges	6,400
American Ethnology	8,000
Astrophysical Observatory	2,600
International Catalogue of Scientific Literature	1,000
Building National Museum	250,000
Preservation of Collections	38,000
National Zoological Park	22,000
Navy Department.	
Hydrographic Office...	27,900
Naval Observatory	12,540
Nautical Almanac	4,250
Surveying Public Lands.	
Surveying Public Lands	87,000
Geological Survey	83,000
Surveying Forest Reserves...	20,000
Analysing and Testing Coals, &c. ...	50,000
Testing Structural Materials	20,000
Department of Agriculture.	
Salaries, Library, Contingent Expenses...	206,900
Bureau of Animal Industry	189,400
Eradicating Cattle Ticks	30,000
Bureau of Plant Industry:	
General Expenses...	117,000
Grain Investigations	8,000
Distribution of Valuable Seeds... ...	47,600
Cotton Boll-weevil Investigations ...	22,000
Forest Service:	
General Expenses	351,400
Bureau of Chemistry	130,000
Bureau of Soils	34,000
Bureau of Entomology:	
Entomological Investigations	22,800
Cotton Boll-weevil Investigations ...	8,000
Preventing Spread of Moths	30,000
Bureau of Biological Survey:	
Biological Investigations	8,880
Bureau of Statistics:	
Collecting Agricultural Statistics ...	44,580
Office of Experiment Stations:	
Agricultural Experiments...	213,400
Nutrition Investigations	1,000
Irrigation Investigations	30,000
Weather Bureau	280,710
Department of Commerce and Labour.	
Coast and Geodetic Survey	198,000
Bureau of Fisheries	134,000
Total	2,740,360